CLAIMS:

1. A dynamic bushing assembly for preventing a tubular member from moving transverse to a longitudinal axis defined thereby but permitting the tube to be rotated about the longitudinal axis, the assembly comprising:

a tube retention area, the tube retention area being defined at least partially defined by a crown member, the crown member defining an apex, the apex having at least one top guide member extending therefrom into the tube retention area, the tube retention area being further defined by a substantially concave surface of a piston, the piston being moveable toward and away from the apex, the substantially concave surface of the piston having at least two bottom guide members extending therefrom into the tube retention area.

2. The assembly of claim 1 further comprising a piston housing, the piston being moveably engaged to the piston housing and being moveable therethrough, the crown member being fixedly engaged to the piston housing.

3. The assembly of claim 2 further comprising a cradle, the cradle being supportively engaged to a portion of the piston housing.

4. The assembly of claim 3 further comprising an elevator mechanism, the elevator mechanism being engaged to at least a portion of the cradle, the elevator mechanism constructed and arranged to move the cradle in a vertically up and down direction.

5. The assembly of claim 1 wherein the at least one top guide comprises:

a guide housing, at a first end of the guide housing the guide housing being engaged to the apex of the crown member, at a second end of the guide housing a roller ball is frictionally engaged to the guide housing, the roller ball being rotatable relative to the guide housing, the guide housing containing a biasing mechanism therein, the biasing mechanism exerting a predetermined biasing force on the roller ball in a direction toward the tube retaining area.

6. The assembly of claim 5 wherein the at least two bottom guides each comprise:

a guide housing, at a first end of the guide housing, the guide housing being engaged to the substantially concave surface of the piston, at a second end of the guide housing a roller ball is frictionally engaged to the guide housing, the roller ball being rotatable relative to the guide housing, the guide housing containing a biasing

mechanism therein, the biasing mechanism, exerting a predetermined biasing force on the roller ball in a direction toward the tube retaining area.

7. The assembly of claim 6 wherein the biasing member of the at least one top guide exerts a predetermined biasing force that is greater than the predetermined biasing force exerted by the biasing member of each of the at least two bottom guides.

8. The assembly of claim 6 wherein the tube retaining area has a predetermined size, the size of the tube retaining area being reduced when the piston is moved toward the apex of the crown, the size of the tube retaining area being expanded when the piston is moved away from the apex of the crown.

9. The assembly of claim 8 further comprising a tubular member, the tubular member defining an external surface, the tubular member being positioned in the tube retaining area so that the roller ball of the at least one top guide contacts a point on the external surface of the tubular member and the roller ball of each of the at least two bottom guides contact a point on the external surface of the tubular member.

10. The assembly of claim 6 wherein each roller ball is at least partially constructed from a wear resistant material.

11. The assembly of claim 10 wherein the wear resistant material is selected from at least one member of the group consisting of: ceramic, crucible powder metal, tungsten carbide and any combination thereof.

12. The assembly of claim 6 wherein each biasing mechanism is selected from at least one member of the group consisting of: a biasing member, a pressurized fluid column, and any combination thereof.

13. The assembly of claim 1 wherein the at least one top guide is moveably engaged to the crown.

14. The assembly of claim 1 wherein each of the at least two bottom guides are moveably engaged to the piston.

15. The assembly of claim 1 wherein at least one of the at least one top guide and the at least two bottom guides comprise a leaf spring.

16. The assembly of claim 1 wherein the longitudinal axis has a substantially vertical orientation.

17. The assembly of claim 1 wherein the longitudinal axis has a substantially horizontal orientation.

18. A dynamic bushing assembly for preventing a tubular member from moving transverse to a longitudinal axis defined thereby but permitting the tube to be rotated about the longitudinal axis, the assembly comprising:

a tube retaining area, the tube retaining are being defined by

a base block, the base block defining a substantially V-shaped groove having a first side and a second side and defining an angle therebetween, the substantially V-shaped groove constructed and arranged to receivingly and removably engage a tubular member positioned therein, the tubular member having an external surface and being disposed about a longitudinal axis, the first side of the substantially V-shaped groove constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis, the second side of the substantially V-shaped groove constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis; and

an arm member, the arm member being pivotally engaged to a portion of the base block adjacent to the substantially V-shaped groove, the arm member being pivotally moveable from an open position to a closed position, in the closed position at least a portion of the arm member constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis.

19. The assembly of claim 18 wherein the assembly is oriented so that the tubular member is retained within the substantially V-shaped groove by gravitational pull.

20. The assembly of claim 18 wherein the assembly is oriented so that the arm member is retained in the close position by gravitational pull.

21. The assembly of claim 20 wherein the arm member comprises a ballast member, the ballast member having a weight.

22. The assembly of claim 21 wherein the weight of the ballast member is about 1/2 of a pound (8 oz., 227 grams) or less.

23. The assembly of claim 21 wherein the weight of the ballast member is about ¼ of a pound (4 oz., 113 grams) to about 3/8 of a pound (6 oz. 170 grams).

24. The assembly of claim 18 wherein the arm member further comprises a biasing mechanism, the biasing mechanism constructed and arranged to removably retain the arm member in the closed position.

25. The assembly of claim 24 wherein the biasing mechanism is a compression spring or an air cylinder.

26. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are at least partially constructed from a material having a hardness of at least 64 as measured on the Rockwell-C hardness scale.

27. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove at least partially define a carbide insert.

28. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are wire burned.

29. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are polished.

30. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are at least partially coated with a hardening agent.

31. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are at least partially coated with tin or titanium nitrate.

32. The assembly of claim 18 wherein the first side and the second side of the substantially V-shaped groove are at least partially coated with a lubricant.

33. The assembly of claim 18 wherein at least one of the first side and the second side of the substantially V-shaped groove define at least one fluid injection ports for injecting fluid into the tube retention area, the at least one fluid injection port being in fluid communication through the base block with a fitting.

34. The assembly of claim 33 wherein the fluid is a coolant.

35. The assembly of claim 18 wherein the at least a portion of the arm member is a cylindrical contact member.

36. The assembly of claim 35 wherein the cylindrical contact member is moveable relative to the arm and the tubular member.

37. The assembly of claim 18 wherein the at least a portion of the arm member defines an edge.

38. The assembly of claim 18 wherein the longitudinal axis has a substantially vertical orientation.

39. The assembly of claim 18 wherein the longitudinal axis has a substantially horizontal orientation.

40. A dynamic bushing assembly for preventing a tubular member from moving transverse to a longitudinal axis defined thereby but permitting the tube to be rotated about the longitudinal axis, the assembly comprising:

a tooling block, the tooling block having a first end and a second end and defining a tube retention area that extends through the tooling block from the first end to the second end, the tube retention area defining a longitudinal axis therethrough, the tooling block further defining at least one fluid injection port, the at least one fluid injection port in fluid communication with the tube retention area, the at least one fluid injection port constructed and arranged to inject a fluid into the tube retention area;

a first gland plate, the first gland plate being engaged to the first end of the tooling block and defining a first opening therethrough, the first opening in fluid communication with the tube retention area; and

a second gland plate, the second gland plate being engaged to the second end of the tooling block and defining a second opening therethrough, the second opening in fluid communication with the tube retention area.

41. The assembly of claim 40 wherein the tube retention area is constructed and arranged to contain a portion of a tubular member therein, when the portion of the tubular member is positioned within the tube retention and the fluid is injected into the tube retention area the assembly acts as a hydraulic bearing preventing the tubular member from moving transverse to the longitudinal axis.

42. The assembly of claim 41 wherein the first gland plate and the second gland plate constructed and arranged to minimize loss of fluid from the first end of the tube retention area and the second end of the tube retention area.

43. The assembly of claim 42 wherein at least one of the first gland plate and second gland plate define a labyrinth, the labyrinth defining at least one pressure reduction area.

44. The assembly of claim 43 wherein a first amount of fluid is injected into the tube retention area and a second amount of fluid exits the tube retention area from the first

gland plate and the second gland plate, the first amount of fluid is greater than the second amount of fluid.

45. The assembly of claim 40 wherein the fluid is selected from at least one member of the group consisting of: water, oils, water soluble cutting solutions, and any combination thereof.

46. The assembly of claim 40 wherein the longitudinal axis has a substantially vertical orientation.

47. The assembly of claim 40 wherein the longitudinal axis has a substantially horizontal orientation.

48. A gripper mechanism for preventing a tubular member from moving transverse to a longitudinal axis defined thereby but permitting the tube to be moved longitudinally along the longitudinal axis, the mechanism comprising:

at least two engagement members, the at least two engagement members being moveable from an open position to a closed position, in the closed position the tubular member being selectively moveably engaged by the at least two engagement members, in the open position the tubular member being released from the at least two engagement members;

at least one counter weight positioned opposite to the at least two engagement members; and

at least one pivot member, wherein the at least two engagement members and the at least one counter weight are in a substantially balanced gravitational equilibrium about the pivot member.

49. The mechanism of claim 48 wherein the at least two engagement members are positioned substantially parallel to one another.

50. The mechanism of claim 48 wherein the at least two engagement members are positioned angularly offset from one another.

51. The mechanism of claim 48 wherein each of the at least two engagement members comprise a jaw structure, the jaw structure having a gripping surface, in the closed position the tubular member being selectively moveably engaged by the griping surface.

52. The mechanism of claim 51 wherein the gripping surface is softer than the jaw structure.

53. The mechanism of claim 51 wherein the gripping surface is at least partially constructed of at least one material of the group consisting of: cloth, natural fiber, artificial fiber, leather, or any combination thereof.

54. The mechanism of claim 51 wherein the gripping surface is at least partially constructed of a first material and a second material, wherein the first material has a hardness that is different than that of the second material.

55. The mechanism of claim 51 wherein the gripping surface is at least partially constructed of at least one member of the group consisting of wool, polyester, nylon, cotton and any combination thereof.

56. A tubular member cutting assembly comprising:

a gripper mechanism for preventing the tubular member from moving transverse to a longitudinal axis defined thereby but permitting the tube to be moved longitudinally along the longitudinal axis, the mechanism having:

at least two engagement members, the at least two engagement members being moveable from an open position to a closed position, in the closed position the tubular member being selectively moveably engaged by the at least two engagement members, in the open position the tubular member being released from the at least two engagement members,

at least one counter weight positioned opposite to the at least two engagement members, and

at least one pivot member, wherein the at least two engagement members and the at least one counter weight are in a substantially balanced gravitational equilibrium about the pivot member; and

at least one dynamic bushing assembly for preventing the tubular member from moving transverse to the longitudinal axis but permitting the tube to be rotated about the longitudinal axis selected from at least one assembly of the group consisting of:

the assembly comprising:

a tube retention area, the tube retention area being defined at least partially defined by a crown member, the crown member defining an apex, the apex having at least one top guide member extending therefrom into the tube retention area, the tube retention area being further defined by a substantially

concave surface of a piston, the piston being moveable toward and away from the apex, the substantially concave surface of the piston having at least two bottom guide members extending therefrom into the tube retention area;

the assembly comprising:

a tube retaining area, the tube retaining are being defined by a base block, the base block defining a substantially V-shaped groove having a first side and a second side and defining an angle therebetween, the substantially V-shaped groove constructed and arranged to receivingly and removably engage a tubular member positioned therein, the tubular member having an external surface and being disposed about a longitudinal axis, the first side of the substantially V-shaped groove constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis, the second side of the substantially V-shaped groove constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis, and

an arm member, the arm member being pivotally engaged to a portion of the base block adjacent to the substantially V-shaped groove, the arm member being pivotally moveable from an open position to a closed position, in the closed position at least a portion of the arm member constructed and arranged to tangentially contact the external surface of the tubular member along at least one line of contact parallel to the longitudinal axis;

the assembly comprising:

a tooling block, the tooling block having a first end and a second end and defining a tube retention area that extends through the tooling block from the first end to the second end, the tube retention area defining a longitudinal axis therethrough, the tooling block further defining at least one fluid injection port, the at least one fluid injection port in fluid communication with the tube retention area, the at least one fluid injection port constructed and arranged to inject a fluid into the tube retention area;

a first gland plate, the first gland plate being engaged to the first end of the tooling block and defining a first opening therethrough, the first opening in fluid communication with the tube retention area, and

a second gland plate, the second gland plate being engaged to the second end of the tooling block and defining a second opening therethrough, the second opening in fluid communication with the tube retention area;

and any combination thereof.